

REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. § 1.104 and § 1.112, and in light of the following remarks, are respectfully requested.

Amendments to the specification

The Decision (at pages 6-7) discusses Skinner (*et al.*), U.S. Pat. No. 5,749,584, which was not relied upon in the rejections on appeal, and so is a new ground of rejection under 37 C.F.R. §41.50(b). Further, that discussion is somewhat incomplete, and so the specification has been amended to clarify the Skinner disclosure.

In discussing Fig. 4 therein, Skinner states that brush seals having bristles having "common angles of approximately 30°-60° relative to radii of the segments" affords a 360° array of bristles about the seal but "cannot be accommodated in labyrinth-type seals or retrofitted in labyrinth-type seals where the labyrinth seal segments per se are movable radially inwardly and outwardly under spring or fluid pressure" while maintaining the 360° array of bristles. Col. 5, last paragraph (emphasis added).

According to Skinner, when a brush seal on a segment having ends cut parallel with radii to allow movement of the segments inwardly and outwardly, and also having bristles at an angle, "it will be appreciated that there will be an area adjacent the adjoining segments 54 which do not have bristles, i.e., are void of bristles." Col. 6, first paragraph, especially lines 18-20.

The specification has been amended to more completely repeat this disclosure by Skinner.

Amendments to the claims

The Decision finds that claims 1 and 6 on appeal, although only a single end is recited, are not interpreted as reciting that the end of the sealing segment and the T-shaped extension are common. The independent claims 1 and 6 are now amended to recite that the ends are common; that is, that the seal segment portion end 203 (a or b) is common with the neck 211 and the accompanying extension ("T-shaped extension"), such as shown in Figs. 2a and 2b. These claims now also recite that the bristles are canted at essentially the same angle as the cuts in the brush seal as shown and described. No new matter is added.

Rejections

In light of the foregoing, the present claims now distinguish from the art cited, including combinations of Brandon, Bagepalli, and Skinner.

As the Decision states, Fig. 3 of Bagepalli shows a brush 32 extending past the sealing segment end as indicated by 56 and 60, *taking into account* that the then-appealed claims were interpreted as not requiring a common end. As now amended, each end of the segment is common for both the seal segment and the extension and that an end of the brush extends past the common end. Bagepalli does not show any portion of the brush extending past the outermost end of the segment: in Fig. 3 the brush does not extend past the end defined by extension 48, and in Fig. 4 (or Fig. 2) the brush does not extend past the end defined by 58 and 62. Bagepalli clearly does not show a common end.

Bagepalli teaches that having a canted brush and trimming the segment ends to be parallel with radii leaves a region of the seal segment without any bristles (col. 1, ln. 47-54, and col. 2, ln. 48-54), effectively acknowledging the disclosure by Skinner. Bagepalli is also concerned with the safety hazard of having the segment cut at an angle because of the sharp tooth ends (col. 1, ln. 42-47). There is no disclosure or suggestion in Bagepalli that the segments are retractable. Taken in connection with the Sulda declaration's conclusion that

Bagepalli does not disclose a retractable seal (which conclusion was not contravened in the Decision), it is clear that Bagepalli does not disclose a retractable seal.

Skinner's teaching of a brush seal on retractable packing requires a space or opening, which Skinner dismisses as non-consequential because the backing plate for the brush can be a labyrinth tooth 67 which does extend the full 360° even if the brush does not (col. 6, ln. 38-44). More importantly, Skinner discloses this opening between adjacent seal segments, so there are multiple small openings depending on how many seal segments are used to make the seal, as each pair of adjacent seal segments has the same configuration as shown in Fig. 6 of Skinner.

Applicants assert that the combination of Brandon and Bagepalli does not render obvious the claimed invention. The examiner's Answer states that "the Bagepalli seal will inherently experience some retraction via temperature changes within the turbine." However, a "retractable" seal segment, as a term of art and as used in the claims, means that the seal is originally disposed at a larger than design distance from the shaft and closes when fluid pressure within the turbine gets behind the seal and causes it to close. This phenomenon is described in Brandon, and also in the Shiffler declaration, where the forces tending to open and close the seal, the fluid pressure behind the seal, is less than design during shut-down and start-up (respectively). The Sulda declaration explains why the Bagepalli seal is not retractable, essentially because the sealing portion and the extension portions do not have a common end, the overlap or underlap creating a condition where the seal will not close. The retractability of Bagepalli was not addressed in the Decision; only the tongue-and-groove configuration recited in claim 6 was addressed in the Decision.

The Answer also states that Bagepalli need only teach a brush seal with ends cut non-parallel with the shaft radii. Skinner has one end cut non-parallel with the shaft radii. The rejection, as iterated in the Answer, that Bagepalli is

being applied solely for the incorporation of a brush seal with ends cut non-radially ignores the *Graham* factor of considering the *difference* between the prior art and the claimed invention. "Care must be taken to avoid hindsight reconstruction by using 'the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.'" *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988). "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). There is no disclosure of a retractable brush seal where the bristles are canted and where the brush provides an entire 360° seal as claimed. This is a difference in kind, not just degree, from the cited art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (C.C.P.A. 1955); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990).

In *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992), the Court reversed a rejection (affirmed by the Board) for a landscape edging strip where the prior art device included a flexible *portion* but also another portion that tended to reduce flexibility, whereas the invention on appeal was claimed as "formed in its entirety of a thin gauge, flexible material." Accordingly, the present rejection cannot dismiss the overlapping offset as irrelevant to the combination of references because it is improper to pick and choose elements to arrive at the claimed invention absent a motivation or suggestion in the art for such a combination. *Smithkline Diagnostics Inc. v. Helena Laboratories Corp.*, 8 USPQ2d 1468 (Fed. Cir. 1988) (claim to blood test device also including both positive and negative monitoring areas not obvious over prior art test having positive monitor and separate prior art test having negative monitor).

"It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the

exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Wesslau*, 147 USPQ 391, 393 (CCPA 1965) (emphasis added). Bagepalli fairly teaches a non-retractable seal that overcomes the problem in Skinner of canted bristles with portions of the brush seal lacking bristles. But Bagepalli provides no teaching or disclosure of retractable seals, in contrast to Brandon, Skinner, and the present invention, which explicitly describe retractable seals. Skinner teaches that for retractable brush seals with canted bristles there will be a portion where the bristles are lacking and so the brush does not cover a full 360°; and that a full 360° coverage can be achieved only with a non-retractable seal. Bagepalli is consistent with this Skinner disclosure and provides a non-retractable seal with a full 360° brush seal, but safer to handle. To choose only the canted brush section with ends cut off-radii disclosed by Bagepalli is to pick only that element without regard to the entire teaching of the reference, that the brush with off-radii ends is part of a structure with a particular function, forming a 360° brush seal with canted bristles, and a particular limitation, being non-retractable, for a particular purpose, being safer to handle.

The claimed invention provides retractability with a 360° brush, overcoming the non-retractable structure in Bagepalli, avoiding the multiple small openings in Skinner, and with bristles canted in the off-radii, cut direction of the brush end. The combination of references cited does not fairly suggest that these advantages can be achieved absent the limitations in the references. Accordingly, the rejections should now be withdrawn, and such action is earnestly solicited.